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CHAPTER - I

INTRODUCTION

"To say that India does not have money
for education [and health care] is absolute,
utter unmitigated nonsense."

Amartya Sen (1999)

"Everyone has the right to education. Education shall be free at least
in the elementary and fundamental stages. Elementary education shall
be compulsory. Technical and professional education shall be made
generally available and higher education shall be equally accessible
to all on the basis of merit."

Article 26(1), Universal Declaration of Human Rights
(United Nations)

1.1 Background

Education is the fulcrum on which human capital development rests. Investments in physical and human capital are complementary. Without investments in education, investments in physical capital will yield lower returns, and vice versa. It has been assessed that investments at each level of education yield high rates of return and above the opportunity cost of capital. It is usually thought to be around 8 to 10 percent and comparable to the rates of return to investments in agriculture, industry and infrastructure. The return to a long-term focus on all round development and poverty reduction therefore implies a higher priority for education.

Few economists would disagree that it is the country’s human resources, neither its capital nor material endowments that ultimately determine the character and pace of its economic and social development. Human resources constitute the ultimate basis of ‘wealth of nations’. Capital and natural resources are passive agents of production while human beings are the active agents who accumulate capital, exploit natural resources, build social, economic and political organizations, and carry forward the tempo of economic development. Clearly, a country which is
unable to develop the skills and knowledge of its people and utilize them effectively in the national economy will be unable to develop anything else (Harbison, 1973).

The most appropriate institutional mechanism for improving human skills is the formal education system. There has been enormous growth in public expenditure on education in developing countries in recent years, particularly in the field of school education. India, as a part of the developing world has made significant progress in the field of education in the last five decades of development planning. This kind of an effort has been in conformity with the national goals and priorities as has subsequently been observed rightly in the National Policy on Education that, "education provides people with an opportunity to reflect on the critical social, economic, cultural, moral and spiritual issues facing humanity. It contributes to national development through dissemination of specialized knowledge and skills. It is therefore a crucial factor for survival" (G.OI,1986). Keeping this kind of a rationale in view, the country has been making huge investments in school education. The past decades have witnessed a phenomenal increase in the number of schools and colleges which are mainly thriving on the financial support from the central or state governments. Government contributions constitute the single most important source of funds for financing education.

The state has been playing a dominant role in the entire system of education in order to satisfy the constitutional obligation of building a 'socialistic pattern of society' and also to ensure access for all sections of society. Low priced educational opportunities have indeed been helpful in bringing about large scale changes in the lives of ordinary and poor people, although education has largely remained an elite dominated center of activity (Khadria, 1989).

But, dominant state funding is not exclusively an Indian feature of education system. All over the world, the state makes substantial funding for education. This is quite contrary to the popular impression that in many countries the education sector is relatively self-dependent, i.e., it does not have to take resource support from the state or from any other funding agency. The actual situation as prevailing in various regions of the world at present, is in fact, to the contrary. Even in the well-known private schools and institutions of the United States of America, the share of fees is
less than 39 percent and in public institutions around 15 percent. In British education system, it is less than 7 percent and in France the corresponding figure is around 5 percent of the total expenditure of the educational institutions (Tilak, 1997). However, the global trend is towards making school education increasingly more dependent on government and institutions of higher education more dependent on fees and on service charges both to students and the industry.

This process has been amplified in many countries including India by reductions in government funding and by pressures for accountability from governments concerning effective use of resources. Economic stringency has led to sharpening of the conflict among priorities in educational objectives, in contrast to earlier periods of more affluence when all the objectives of education could be pursued more or less simultaneously. In a sense, education is being made to pay the price of its own success for firmly establishing itself, through its massive post-war expansion, as an integral fabric of the society as a whole. This was in full conformity with the multiplicity of objectives – social, cultural and economic which education had to achieve, keeping the development of the individual as the most accepted common goal. What is new is the persistent demand, coming from various quarters of the society, for educational reforms. In most of the countries, by far the most urgent pressure is to enhance the accountability of this sector coupled with the demand for increasing the contribution of education to employment and the economy, in order to improve its cost effectiveness. The upshot of this change in the approach and attitude is that, development of education is no longer propelled, in contrast to the past, by its internal dynamics, but has become more sensitive to various external pressures. This trend will further be accelerated over the coming decades, under the impact of a number of major developments in different regions and countries across the world and to which education will increasingly be called upon to respond. However, the Indian system of school education, which has been undergoing a significant change since the introduction of structural adjustment policies in 1991, is slightly experiencing changes to these trends.
1.2. Education: A Harbinger of Economic Growth

In the whole system of education, the elementary education plays a significant role, because its initial linkage with productive process and hence, economic growth at macro level. It is a crucial factor for survival because of its contribution to national development through disseminations of specialized knowledge and skills. Country's circumstances differ but in general, in economics, rates of return are greatest for primary education, followed by secondary and then higher education. Economies with universal primary education that have undergone rapid growth tend to show a higher rate of return to secondary than to primary education. Education reforms are vital in order to sustain valuable human capital of a country. Delays in reforming education systems carry the risk of reducing future economic growth. Clarities for reforms in education lie in three principal areas: Finance, Content and Delivery. Spending more public funds per higher education student than per primary education student is inefficient in most countries, because the social returns are generally lower to higher education than to primary education at least in a country, where universal primary and secondary enrollments are yet to be achieved. Education can contribute to social, cultural and economic development of a country. Education produces knowledge, skills, values and attitudes which are necessary for the development of society and economy. Education is the main instrument for disseminating the accomplishments of human civilization and essential for civic order and good citizenship. Further, more importantly, maintenance of higher living standards, better health and nutrition, increased productivity and sustained economic growth and the reduction of poverty and social and economic inequality and good governance all depend on widespread education. Therefore, these multiple roles of education make education a key area of public policy in all developing countries (World Bank, 1995).

Education like other forms of investment in human capital, can contribute to economic development and raise the incomes of the poor just as much as investment in physical capital, such as transport, communications, power or irrigation. The World Bank, which provides financial and technical help for the development of
poor countries has long recognized the importance of investment in education and has been active in this field since 1962.

Long before the formulation of the UNESCO resolutions and the emergence of interest by international agencies like the World Bank, UNICEF, UNDP etc., the Government of India (GOI) had recognized the importance of school education in general and elementary education in particular and had made a resolve in the Constitution of India as long ago as in 1950.

"The State shall endeavor to provide within a period of 10 years from the commencement of the Constitution for free and compulsory education for all children until they complete the age of 14 years (Article 45)."

By resolving to provide elementary education 'free' to all, the Government of India has also implicitly recognized the 'public good' and 'merit good' nature of school education. School education is, in fact, recognized by many as a 'pure public good', as the benefits from school education are immense, they are not confined to the individuals who go to the school, and the rest of the society also benefit considerably. In fact, the neighbourhood or externality benefits of school education are believed to outweigh the direct private benefits. Besides, it is a 'merit good' as the state knows better than the individuals about the benefits of education.

The world educational crisis that erupted in the 1970s has profoundly altered the financial posture of educational systems everywhere (Coombs 1985). During the halcyon years of the 1950s and 1960s, when education budgets in virtually all countries were expanding rapidly, the big question facing policy makers and educational managers were how best to allocate the sizeable annual increments among different educational levels and uses. Today, however, with most countries' educational budgets frozen or shrinking, the daunting question is where to make the cuts?

This adverse financial situation is tied to several other critical educational issues that are currently plaguing both developing and developed nations (though in different degrees of intensity). They include (1) the erosion of educational quality and relevance and the often dubious contribution of education to individual and
national development; (2) the increasing numbers of "educated unemployed" and the growing incongruities between the world of education and the world of work; (3) the gross educational inequalities that penalize females, the poor, and various ethnic minority groups; (4) the declining status and attractiveness of teaching as a profession; (5) the deterioration of international educational co-operation; and (6) most worrisome of all, the waning public confidence in education.

Even the richest industrialized nations have to face these critical problems, but by far the most serious victims are the low-income developing nations, especially in Africa. The latter have a quintuple disadvantage: slim and overstrained resources; relatively low school participation rates and literacy rates: imported educational models that are often ill-suited to the countries' circumstances: saturated employment markets and high population growth rates that generate continuing powerful pressures to expand enrolments. In the face of adverse financial circumstances, the central challenge to educational managers everywhere is to find ways to use their limited resources more efficiently and effectively and to augment these resources by tapping new sources of revenue.

The contribution of education is not restricted to economic returns only. Its significant effect on reduction in poverty and improvement in income distribution, improvement in health and nutritional status of the population, its negative relationship with fertility and population growth, positive association with adoption of family planning methods, its positive relationship with general social, political and economic development and overall quality of life are well recognized. All this contributed to the rapid growth of education in India, though it is still not adequate.

A national commitment to schooling requires that a method be established for obtaining and allocation resources for education. School finance refers to the process by which tax revenues and other resources are derived for the formation and operation of elementary and secondary schools as well as the process by which those resources are allocated to schools in different geographical areas and the types and levels of education. Although school finance is closely related to higher educational finance, important differences in institutional contexts generally requires the separation of elementary and secondary school finance from post-secondary
educational finance. Accordingly, the term school finance has generally been limited to the elementary and secondary schools and in some cases, pre-primary education. The area of school finance draws heavily upon a variety of concepts and theories from other fields. Since, laws must be passed and administered, it is closely related to the policies of education and educational law. Since various aspects of economics and finance are involved, it must draw upon principles from the economics of education and government finance. Since the overall plans for financing education must be translated into the operations of schools, it must necessarily relate to school administration.

It is important to provide brief definitions of a number of terms that are commonly used in school finance. School revenues refer to the financial receipts of schools for supporting their operations. Such revenues can be derived from taxation, tuition charges and student fees as well as from contributions and income from the provision of goods and services. School expenditures refer to the financial disbursements of schools for the purchase of the various resources or inputs of the schooling process such as administrators, teachers, materials, equipment and facilities. Costs represent the value of all resources used in schooling process whether reflected in the school budgets and expenditures or not. The costs of school resources include the values of any inputs that are used, even if they are donated or not reflected accurately in expenditure accounts.

Because of fundamentally different nature and financing of capital and operating expenditures, it is useful to differentiate between them. Capital expenditures are those incurred for providing school plant and facilities. Although capital investments require a large initial expenditure, the plant and facilities have a lifetime that extends over many years. In contrast, operating or recurrent expenditures refer to financial outlays for school resources that are used each year for the operations of the schools, such as teacher salaries and disposable supplies. Budgetary provisions must be made for operating expenditures each year.

School finance begins with the major decisions about education, such as who will be educated and in what ways. The financial aspects must necessarily be based on the translation of these decisions in to resource requirements, which will be
satisfied through tax revenues, family expenditures and donated resources. In any society, the nature of educational finance issues will be determined by the types of educational decisions and commitments that are made. Since, these will differ substantially from society to society, so too will school finance arrangements. For example, the issue of educating handicapped youngsters is central in some societies, while in others it is not. Accordingly, school finance will address the problem of financing education for the handicapped in the first case, while not considering it in the second one. In some countries special concern is focused on problems of rural education, ethnic minorities, immigrants, illiterates and the poor. Other countries do not have these needs or they are simply unrecognized. Educational expansion and vocational training are important priorities in some countries, while others must adjust to declining enrolments and place their emphasis on academic preparation. All of these differences in educational policy concerns will necessarily be reflected in the debates, discussions and formation of a school finance agenda. As this presentation suggests, substantial differences characterize school finance from nation to nation. There is not a single and unified approach to school finance that is suitable for every situation. Although principles of school finance can be applied to many different societies, their actual applications must reflect the unique economic, political, social and cultural attributes of each setting. In a more general sense, there is no universal tax or expenditure approach that is uniquely suitable to education. The specific revenue needs of the schools and their disbursement patterns must always be based upon a consideration of the overall economic, political, social and cultural context in which they will be employed. What is clear is that education makes a prodigious demand on the resources of almost all societies and even these amounts do not reflect the sizeable private expenditures on schooling and related educational needs such as books, transportation and uniforms.

The best way to understand the field of school finance is to consider it as a decision oriented phenomenon in which educational decisions must be translated into ways of financing schools. Each society has its own educational priorities, system of government finance, political mechanisms for making decisions and administrative structures for implementing them. School finance represents one of
the major dimensions of these structures and processes and such financial decisions must be made concomitantly with broader policy decisions in education and in the large society. In a sense, each educational decision has implications for ascertaining how resources will be obtained and allocated. By reviewing a number of different decision areas in education, it is possible to see their consequences for school finance through unit and institutional cost and its achievement.

1.3 Concepts of Unit and Institutional Costs and Achievement

The concept of cost of education is of strategic importance from the point of view of educational planning and policy making. The basic concepts of cost as used in economics are also applied while calculating or defining different types of costs in education. In the theory of economics, the concept of cost comes in to question in the production of various goods and services. There are two ways of expressing costs: monetary and non-monetary. Costs affect any particular economic entity in the process of production beyond that as well. The entity may appear in the form of a producer, a wholesaler or a consumer.

It is also important at this point to mention that because of the special character of education, certain problems arise when one calculates educational costs. Though the same concepts are used in the cost analysis of education as they are applied in calculating the cost of production in a firm, yet certain difficulties arise because some inherent characteristics make educational products distinct from the products of the firm. Three examples are given below:

1) Educational institutions produce graduates who add to the reservoir of human resource of the country. All others who could not graduate successfully also imbibe some knowledge and help preserving the store of human learning. Both are the products of the same system and those belonging to the latter category do not become entirely useless just because of the fact that they are not successful graduates. In a firm, any product other than a finished one is usually considered a waste. But this is not the case with products of educational institutions. These two different categories imply two different measurements of the quantity of education produced by a single
institution and pose a problem of choice between the two, for the purpose of calculating the total as well as the unit cost of education.

2) In the case of a firm one definitely knows the producer and the consumers of its products are normally identified by the act of selling. But does one know for certain as to who is the real producer in an educational institution? It could be society as a whole, the Ministry of Human Resource Development or the institution itself. Students could be identified as the consumers of the educational production process. But does the student consume all the elements of educational production? The family may enter into the picture apart from society and the employers of the graduates. So whose cost is it after all? The difficulty in specifying the economic agents or entities at the provision and at the receiving end creates complexities in educational cost analysis.

3) Last but not the least; education is a commodity as well as a service. Even if we assume that a certain amount of education has accrued to somebody, it is difficult to assume that a particular person can internalize the whole quantity forever. It has got externality effects and many people get the indirect benefits from a person's education. Should they be included in the list of potential consumer? This public good character of education raises another problem while calculating the costs of education.

Technically speaking, costing of predictably repetitive technological processes can be done in advance and funded accordingly. An educational institution does not possess any such technological know-how through which it can produce strictly homogeneous products as is done by a firm. Therefore, the logical precision in calculating the cost of a product of a traditional firm is not present in case of an education-producing unit. If one considers the case of a small nursery school one can always calculate the cost easily and charge the beneficiaries accordingly. This can be done with a fair degree of accuracy till the undergraduate level because they are homogeneous products to a considerable extent. But when one takes the post graduate courses into consideration, the logic of cost calculation slowly gets complex because there is no homogeneity in resource use and of the outputs as well.
More over, advanced cost calculation is extremely difficult in case of any educational institution at the higher level and it can only be done by using the data of expenditures that have already been incurred. The students at the post graduate and research level are so different from one another that it is really an untenable proposition to measure all of them by a common cost parameter. Not with standing all these difficulties, educational cost analysis has got its own merits. The most important among these merits is, it helps in the 'decision making' process. Here, we can distinguish between two broad concepts of cost. On the one hand, there is the expert concept of cost as an allocation of past expenditures, when cost is sunk and resources can no longer be re allocated. On the other, there is the concept of cost as an element in the 'decision making' process. Such a cost arises only at the point in time at which a decision relating to production is made. It is at this stage one is concerned only with avoidable costs for purposes of decision making. As sunk costs have already been incurred, those should not therefore be used to affect decisions about the future.

A simple example will clarify this important distinction. Let us suppose that a course was taught last year and the resources used consisted solely the academic staff costing Rs.20,000 altogether and building space-hours owned by the university, the interest and amortization of which amount to Rs.80,000 annually. The total cost of mounting the course during the year was therefore Rs.1,00,000. This figure represents cost in the expert sense of an allocation of past expenditure. Now suppose that it is proposed to double enrolment to the course in the following year and that requires an exact doubling of staff and space hours. Suppose further that these space- hours currently lie idle in the university. In order to decide whether to expand the courses, the university needs to know the costs that will be incurred in so doing. The figure of Rs.1,00,000 is not relevant to the decision that must be taken for Rs.80,000/- of it has already been sunk; the space- hours are there already. The cost of expanding the course is the Rs.20,000 required for academic staff, and this represent cost in the decision making sense. This is the figure of avoidable or running cost which works as a factor influencing future planning and decision making.
It would be quite wrong to use expert calculations of cost in order to influence decision-making. The university would not save in any real sense Rs.1,00,000 by discontinuing the course considered above. Therefore, data on avoidable costs, i.e. costs of recurring nature have been used in this study to take decisions for the future. Before we discuss other merits of cost analysis in education and finally more to calculate and analyze the institutional costs of the schools of two blocks it is necessary to highlight the cost concepts, which are used in the study.

1.3.1 **Money cost and opportunity cost**

Economists have differentiated between ‘money cost’ representing direct production expenditure expressed in terms of explicit monetary outlays and ‘opportunity cost’ which is alternatively defined as ‘real cost’, which do not occasion actual monetary expenditure. “When we are forced to choose between scarce goods, we incur opportunity cost. The opportunity cost of a decision is the real value of the best available alternative” (Samuelson and Nordhaus, 1989). It has been observed in actual practice that the difference between ‘money cost’ and ‘opportunity cost’ is best represented by the different approaches adopted by economists and businessmen or accountants. The economist usually includes more items in cost than accountants or businessmen do. For an economist cost may reflect monetary and non-monetary transactions. But a business person generally excludes non-monetary transactions. The accountant generally prefers to use actual historical cost as a technique for assessing the value of various goods; the economist prefers to use the market value of a good because it measures the value of that good in its highest and best use. The economist chooses a broader concept of cost because she/he looks to life as full of choices. In choosing something one sacrifices something else. When one visits a museum one can’t read a book. When someone studies in a school, he or she usually fails to utilize the opportunity to get an employment. Every time a business concern or a nation or an individual makes a decision, it incurs costs by discarding the alternative courses of action. “Cost includes, in addition to explicit money outlays, those opportunity costs that arise because factors, might be used in alternative ways. If my labour or capital in computer programmes could have been used in coal or wheat, or even in some other
person or computer firm than my true costs must include the best alternative costs” (Samuelson and Nordhaus, 1989).

1.3.2 Capital and recurrent cost

Total costs of any producing unit include fixed or ‘capital cost’ and variable or ‘recurrent cost’. Fixed costs consist of items like investments in buildings, equipment, infrastructure and other basic services. Expenses on these must be incurred even if the organization produces no output and they will not change when output changes over time. Variable cost are those that vary with the levels of output materials required for production, wages, power etc. and include costs that are not fixed.

In the present study capital expenditure\(^1\) has been taken into account in the form of depreciation provision because such investments last for several years and only that part of it should be taken into study which is broadly arrived at for a particular year considering the long life span of capital expenditure. Capital expenditures of educational institutions are basically allocations under what are generally referred to as ‘plan grants’. Cost studies all over the world do not take expenses of non-recurring nature into consideration while determining the cost of education. But there are some categories of expenses even included under plan expenditure which are actually recurring in nature. It generally needs careful attention and a probing eye while shifting through such planned expenditure data in order to find out what expenditure falls into which category. Great care has been taken while ascertaining all such data from the annual accounts and related documents of sampled schools of both the blocks.

From economist's point of view, building costs provide an example of both direct and indirect (opportunity) costs. Direct cost is the capital cost that is paid as price for the purchase of the building. For planning purpose, we take the annual depreciation cost of buildings, taking into consideration of lifetime of the building. However, there is also an opportunity cost; if the money had not been used for this

\(^1\) Capital expenditure is alternatively known as development or plan expenditure of India.
purpose, it would have been used for a different purpose and that is the opportunity cost of the building.

Recurrent expenditure\(^2\) is only taken into account in this study while calculating the total/institutional costs. As we know, recurrent expenditure of an educational institution includes expenditure on salaries, maintenance of infrastructure and equipment, expense related to electricity, stationary, postage and all other spending, which are repeatedly incurred in each successive year.

But there are some expenses like ‘purchase of books and stationery’ which are included under the recurrent expenditure head in case of both the blocks. Those have been identified and excluded from the calculations, as they do not form a part of running costs. Recurrent cost can be divided into two categories: direct and indirect costs.

Direct expenditure consists of all expenses directly related to any particular activity. All such expenditure is absorbed while that particular activity is in progress without having to be distributed among many activity centers. Indirect expenditure is the share attributed to any given activity from centrally incurred or common expenditure sources like library, general administration, student welfare facilities, security and so forth.

\textbf{1.3.3 Institutional and individual costs}

Costs analysis in education involves a typical case of the total cost incurred in an institution or school to produce graduates of different courses. Obviously, educational expenditure is incurred in two separate domains. Individual costs of education are those incurred by the students, or by their family members. Individual costs may further be categorized under direct and indirect costs. Direct individual costs include various types of fees and other charges, whereas indirect costs may consist of books, stationary and hostel expenses etc.

\textbf{1.3.3.1 Individual/private costs of education}

Private individual costs of education are those costs of education incurred by students or their parents/guardians or by families as a whole. But private costs of education refer to such costs as are incurred by the owners and managers of private

\(^2\) Recurrent expenditure is alternatively referred to as non-plan or maintenance expenditure in the planning parlance in India.
institutions when these expenses are financed out of revenue raised from non-
government sources. For conceptual clarity, the former cost may be referred as
individual rather than private cost of education in order to distinguish it from
institutional cost defined above as private cost.

Individual cost may further be sub-divided into two components: direct cost
and indirect cost of education. Direct cost includes expenditures incurred by students
or their parents on all varieties of fees and user charges and expenses on such items
as books and stationery, extra electricity bills necessitated by late night studies, cost
involved in commutation from home to school/college and back, etc.

Direct costs are visible as they include all money expenditures incurred. Indirect costs are not so directly visible. They are generally referred to as earnings
forgone by the students or opportunity costs. Indirect cost of education may,
however, be defined more broadly than in the sense of opportunity costs. Education
changes the entire life style of a person in so far as the educated person acquire
tastes and habits which are different from those of un-educated persons warrant
higher expenses on better levels of living, including expenses on conspicuous
consumption and consumption of goods and services produced almost exclusively
for educated people. Expenses on newspapers and magazines, domestic computers,
fashionable dresses, more frequent expenses on movies, disco, frequent visit to
hotels and restaurants invariably enter into the household budgets of the educated
persons.

As mentioned in problem part and review of the related literature it focused
that many studies on costs of education in India, for that matter in many countries,
have been confined to institutional costs only. The institutional costs, however, in
some cases, include some private costs also, specifically the fees. But little attempt
has been made to include the other more important parts of private costs of
education, namely,

i) Out of pocket costs on education excluding fees, such as the
maintenance costs, expenditure on books, stationery, transport,
uniforms, hostel, etc.
ii) The foregone earnings, or the opportunity cost, i.e., the ‘real cost’ that is given up to obtain education. It is rightly argued that to exclude household costs on education and include the latter is ‘to take a superficial and inconsistent view point’ (Leite, et.al., 1968).

While there is no ambiguity with respect to the maintenance costs such as fees, costs of books, stationery and hostels etc., opportunity costs received much criticism in the literature. It is generally argued that for planning purposes it is sufficient for the state to know about the institutional or more specifically the public costs of education. This is not wholly true. It is equally important for the state planner to have a clear idea of the private cost of education and the extent to which individuals will be ready to meet their visible and the invisible (opportunity) costs of education. “This information is absolutely essential to make proper planning of resources for education in general and to plan for public expenditure on scholarships, stipends and free studentships, etc. in particular. Ignoring these aspects is too costly, resulting in wide gap between the expected (or planned) enrolments and actual enrolment” (Tilak & Varghese, 1983). For instance, a substantial part of the problems of non-attendance and the dropouts in school education could be attributed to ignoring the aspects on private costs including the opportunity costs in resource planning.

Opportunity cost is relatively a simple concept, but one which has powerful implications. In other words, the time of the student cannot be taken as free and costs less. The cost of a very valuable resource that is otherwise ignored, is the cost of time. Opportunity cost of students reflects the value of this scarce resource, viz., the time. There arguments in the literature both for and against consideration of opportunity costs (Tilak, 1977 and 1981 for details). For example, Vaizey (1962) argues: “inclusion of income forgone opens the gate of a flood of approximations which would take the concept of national income away from its origin as an estimation of the measurable flows of the economy, it is doubtful whether anymore useful purpose is served by a statistical exercise of the kind, than could be achieved merely by observing the number of people engaged in education”. He also argued that when elementary education is compulsory, the opportunity costs of elementary
education should not be considered. But, if opportunity cost of students is to be ignored because (elementary) education is compulsory, then direct costs should equally be excluded (Becker, 1964). Sometimes it is argued that opportunity costs should be adjusted for unemployment, expecting, in which case, opportunity costs to be negligible. But as Bowman (1966) argues no adjustment for unemployment should be made because the intention is to measure the value of the resource rather than the failure to use them.

To sum up costs can be classified in a variety of ways:

a) By source : Individual, institutional and social etc.
b) By type : Fixed, variable, capital and current etc.
c) By items : Salaries, maintenance, repairs, teaching supporting material, books, incentives like uniform, midday meals etc.
d) By functions : Teaching activities, Para-educational or extra-curricula activities, games and sports, supervision, administration, health care, etc.

Obviously, all these can also be calculated by levels of education per a given unit of input/output and per unit of time.

1.3.3.2 Institutional costs of education

Institutional costs refer to expenses incurred by an educational institution, irrespective of whether the source of finance is public or private, and whether resources are under private or public ownership, or whether the institution is a government or a private or mixed (government-aided) one. Overall institutional cost may be defined as the aggregate of all expenses incurred by an institution in the production of knowledge irrespective of the source from which it is financed.

Many a study on costs of education are confined with the institutional costs of education, essentially because of unavailability of data on private costs of education. The institutional costs of education are generally analysed by either of the following ways of classification:

a) Variable and fixed costs of education;
b) Recurring and non-recurring costs of education; and
c) Current and capital costs of education.
One may expect that but for the terminology the three classifications are just alternative ways of classification. In other words, the fixed, the capital, and the non-recurring costs mean the same, viz., the cost incurred almost once for all (unless the scale of operation/production changes), and the cost that do not vary along with a change in the input/output of the educational system. On the other hand, the variable, direct or recurring costs refer to the costs that are incurred every year and have direct correspondence with the inputs or outputs of the system, viz., the pupils. It may be noted that recurring costs are defined as one that are incurred every year; and non-recurring costs are incurred, generally once for all. Recurring and non-recurring costs are perfectly synonymous with variable and fixed costs respectively. Fixed costs are defined as those costs that do not change with a change in the number of pupils, e.g. costs on buildings, while variable costs vary with every change in the number of pupils, e.g., costs on teachers’ salaries, laboratory materials, costs on scholarships, etc. On average terms, fixed costs go on declining given that the scale of operation does not change, with increase in the number of pupils, but variable costs may follow a different pattern.

However, one can not rigidly argue that certain costs are fixed; and others are variable. For example, if the number of students increase by a reasonably large number, not only number of teachers has to be increased, but additional number of classrooms may also have to be constructed. Similarly, if the number of students increase by a small number, the ‘variable’ cost on teachers may not change, in which case they may also be called fixed costs. Sometimes distinction is made between short run fixed costs and long run fixed costs —while cost of buildings form long run fixed costs, costs on teachers’ salaries etc. are referred to as short run fixed costs.

Broadly, the fixed costs includes the costs on the following items:

i) Purchase of land and buildings or costs of construction of buildings.

ii) Purchase of furniture;

iii) Purchase of durable equipment; and

iv) Costs on other non-recurring items.
With regard to the fixed costs, it is quite difficult to calculate the unit costs per year. Generally in many a study it is either ignored, or some -times rent is imputed on the fixed assets. This forms a component in the recurring costs. Thus, while the costs of buildings forms fixed or non-recurring cost, the rent, or depreciation forms recurring cost. On the other hand, the variable or the recurring costs include:

i) Salaries and allowances of the teaching staff;
ii) Salaries and allowances of the non-teaching staff;
iii) Scholarships, stipends, fee concessions and free student-ships etc
iv) Purchase of non- durable or consumable material; and
v) Costs on maintenance and repairs of buildings, furniture, equipment etc.

1.3.4 Cost and expenditure

Before proceeding to the next section, it is also important to distinguish between the terms ‘cost’ and ‘expenditure’ as they are very often used synonymously. Cost of education as the concept is used in this study, is that part of spending in an institution, which has some direct relationship with the educational production function of the concerned institution or school. Expenditure is a relatively broader concept and may include all the expenses in an educational institution not having any direct relationship with the educational process (Tilak, 1995).

1.3.5 What is unit cost?

Unit cost is nothing but the average cost or cost per unit of output. In a firm or a business concern the unit is well defined. In a pen-producing firm, pen is the unit. In a firm, which produces bicycles, bicycle is the unit of output. But the educational institution has a typical characteristic. Though the unit is always a student, a student has different facets. We can take a student, just because she/he is on the rolls, we can categories students on the basis of different levels of education obtained, or else we can identify students as complete graduates, which unit is to be used for the cost study? If we take the case of finished products, only graduates of different courses will fit the description.
If one strictly follows economic theory, the unit cost is usually an indicator or the unit of final output. This would suggest that a ‘successful student’ would be the appropriate unit of reference. But all the students in a school do not graduate in a particular year. Expenditure in any particular year relates to various educational activities with a number of students participating in them. Most of the students remain on the rolls for more than one year. If any funding authority has to give funds to any institution only on the basis of successful products or graduates, the amount of grants will be highly inadequate and it would be difficult to evolve separate criteria to calculate the cost of continuing and graduated students simultaneously. Cost studies undertaken so far, in educational institutions therefore, take into account students on roll at different levels. This study will take the students on roll in different classes.

There can be two broad types of unit costs though many other types can also be mentioned. The first one is ‘institutional unit cost, which indicates the cost per student in an institution as a whole without any distinction being made among different classes. It includes both academic costs of various individual schools taken together and the administrative costs. This type of a calculation is generally used for funding purposes and also for making comparison of different institutions. The other one is ‘class wise unit cost’, which shows costs of students in different classes of any particular school. However, this study does not emphasize the class-wise unit cost because data required are not available, inadequate and non-uniformity in schools. Calculation are accordingly made between various types of school. As this study emphasizes institutional cost various components of such cost is elucidated in the figure below.
Figure 1.1
Classification of Institutional Cost

Institutional Cost

Academic

Teaching

Academic Faculty

Student Welfare

Administration

General Administration

Commission, Service and General charges

Student Welfare

1. Salary of Teachers
2. Salary of Research & Technical staffs
3. Salary of Supporting staffs, Seminars etc.
4. Laboratory expenses
5. Field work expenses
6. Miscellaneous

1. Library
2. Examination
3. Centralised Facilities
4. Publications
5. Engineering Maintenance
6. Sanitation
7. Electricity & Water
8. Security
9. Estate management

1. Health care
2. Canteen
3. Students Union
4. Sports and Cultural Activities

1. D.P.O's Office
2. D.H.O's Office
3. S.D.O's Office
4. DPEO's Office
5. BEO's Office
6. Principal/Head Master Office
7. Finance & Accounts Section

1. Travelling
2. Postage
3. Telephone
4. Stationery
5. Other expenses
6. Miscellaneous
7. Health Care
8. Retirement Benefits
9. Other Benefits

Note: Constructed by the Investigator

1.3.6 Apportioning common costs

Educational institutions are just like multi-product firms producing more than a single product. The schools for the study produce teaching and job oriented training. If this is the case, than how should we reconcile our data, which is to be measured in terms of a single product called students on roll, to make a meaningful analysis of joint products? In the case of the secondary/higher secondary schools, some inputs like the library, central administration, etc. support both the teaching and training activities. Therefore, while calculating the class wise unit costs the common cost items have to be appropriately distributed among various activities or items.
1.3.7 Why cost analysis is important?

Fielden and Pearson (1978) say, "In the current economic climate, resources for education and training are becoming scarce. There will be increasing pressure from the policy makers for cost reduction and increased 'efficiency' and there is likely to be more resistance to providing extra resources for educational projects. Educational staff will, therefore, need even more than ever before, to make the best use of the resources available, to examine carefully the full resource implications of any proposed new schemes, and to support their arguments with quantitative data wherever possible". Cost analysis can be a powerful aid to achieving these aims. Though the above prescriptions do not match entirely with the purpose of the study, yet some of them underscore the importance of cost analysis of education. When costs are calculated for different programmes and activities, all the relevant quantitative data are scrutinized and a particular activity is open to questions regarding the rationale of using specific amount of resources. The fund managers of institutions have to explain to the funding agencies that why certain costs are incurred in a specific manner. Availability of data on cost differentials for similar activities across several schools also puts a question mark on the way funds are used in the schools and various norms ways can be devised to plug on necessary use of resources which account for such cost differences. The statistics on cost of various activities also indicate the efficiency and cost effectiveness of certain academic sessions. When data of several education institutions are made available a smooth practice can be initiated to check the points of wastage and spending under similar heads under similar circumstances gets equalized. For the purposes of funding and efficient resource use, cost analysis serves very usefully because the funding authorities come to know, how much money should be given for a particular academic session and they can surely ask the institutions to use the scarce funds efficiently using comparative statistics with them.

Above all, an institution using public funds has an obligation to show how these funds have been used. The issue is not only to check corruption or preventing mis-utilisation of funds. Rather it is clear enunciation of academic training and other
objectives and an accounting of how and under what condition and with what costs such goals have been met.

1.3.8 Analytical usefulness of unit cost

Effective financial management is a multifaceted concept, which helps paving the way for better decision making in useful resource utilization. The finance provided out of scarce resources for the growth and development of educational institutions are to be spent in an effective and constructive manner in order to promote non-wasteful use of the funds. Unit cost calculation is an effective managerial tool to achieve these objectives because it gives us an indication regarding how much has been spent on different programmes of schools so that a comparison can be easily made and cost control mechanisms can be put into effect in order to determine as to how much to be ideally spent for a particular academic or non-academic programme in the schools or educational institutions. Data on unit costs of different activities can also reflect the percentage of resources spent on such activities relating to the ‘total cost’ of any programme. This tool would also specifically tell us when inter block or inter school comparisons are made where we have spent a little more unnecessarily. If a school is using an extra non-teaching/technical hand or some other material input in comparison to another similar school of same block or in another block, the concerned authority in the institution may be asked to justify the reason behind such use. Every single spending decision will be accountable in the process which will ultimately lead to better fund management and efficient handling of valuable resources.

Once the cost of schooling is known class-wise, the funding authorities can fund accordingly thereby rejecting a complex and subjective system of financing the schools and educational institutions. Regarding this, the Punnayya Committee mentions, “we would expect that with the adoption of the unit cost system, many sources of wastage and unintended or unjustified subsidies are likely to be identified and discontinued. Concurrently more efficient and fuller utilization of facilities, avoidance of wastage and adoption of new cost effective measures may emerge” (UGC, 1993).
1.3.9 The school performance

Evidence of recent research works and political demand emphasize that schools should be more accountable and take over the role and responsibilities of socializing. Those have also focused attention on strategies for judging schools effectiveness, i.e. academic performance. Despite their obvious importance to the educational enterprise, studies on school effectiveness are in short supply particularly in India.

In a business firm, which exists primarily to make money, profits become a primary criterion to ascertain the performance of the firm. Similarly, net out-put and productivity may be other primary criteria for managing performance of the firm. However, as Bear, et.al. (1989) rightly argue, in educational institutions calculation of profits, out-put or productivity along these lines is usually impossible and it is necessary to invent and depend on more sophisticated assessment, usually based upon secondary criteria for measuring institutions' performance.

School performance is the basis for ascertaining the effectiveness of the school, which tells us how well the educational goals of the institution have been accomplished. Neville (1989) rightly observes, that the economic model for indicating performance is widely established even though it places little, if any, emphasis on outcome, with attempts to assess value for money in relation to pupil/teacher ratio, cost per pupil, occupancy ratios, participation ratios by comparison between Local Education Authorities. However, these indicators serve more as administrative and planning related queries regarding performance. The quality of performance may be indicated by examination results, the prominence of display work, the conditions within the classroom, the rapport that exists between teacher and pupil. The conduct of meetings and the involvement of all teachers in them, the composition of annual report, innovatory activities, an awareness of one's failings and imperfections and the relevant attempt to put these right and the obvious or the visible concern for the weakest member of the team (Neville, 1989). Many of these indicators of performance although excellent in their usefulness for gauging the effectiveness of the institutional set-up are too difficult to ascertain in general. Gencks (1983) seemed more concise when he opined that good school performance
may be indicated through a four factor analysis viz. student learning, parent satisfaction, staff satisfaction and morale and cost control. There may be several other factors, which may indicate performance. For example, one may look at the teachers themselves in the school and make certain judgments. One could look at the staff turnover, at the absence rate, at the attendance rate, at punctuality, at qualifications, at attendance on in service courses, attendance at functions and meetings either directed or non-directed etc. Some people may still suggest some other kinds of key characteristics which in their opinion, will demonstrate institutions' performance and its quality like, behaviour patterns, the cleanliness of the school ground, a lack of noise and insistence on school uniform, etc.

Reid. et.al. (1987) feel that though there are several criteria used to describe effective school yet the pupil progress is emphasized as the chief criterion. Progress, in fact, is judged in terms which are both cognitive (reading, math's, writing and orally) and non cognitive (attitudes behavior, attendance and staff concept). Studies on school performance have identified several factors related with achievement.

Several other studies on school performance by Rock (1988), Scott (1988), Nicochea (1987), Lukich (1987), Brantley (1987), Brarand Dreeben (1977), Glass and Smith (1978) and McDonald (1976), all shown that the variability in students performance in academics was related to SES (Socio Economic Status) of students, and various factors operating within the school like teacher characteristics, classroom situation, school productivity, class size, teaching experience, number of hours of schooling a student has had, administrative organization of the school, organizational climate in the school and morale of teachers.

While analyzing the qualities of an effective school, Stout (1989) pointed out that in such schools parents, students and teachers share a common understanding that the mission of the school is to foster academic achievement. Teachers and parents have high expectations for students' achievement and make this achievement explicit. Academic achievement is recognized and celebrated. An effective school is described as one in which all participants share work diligently toward academic achievement without forsaking other important goals.
The search for reliable criteria of school performance argues Nagoshe (1982), can be a separate area of research study. In western countries some standardized tests on basic skills are frequently used for this purpose as has been done in the studies of Rock (1988), Besch (1984) and Franklin (1983). But Veeraraghavvan (1986) argues that these tests are said to be unreliable for testing the effectiveness of school. The use of achievement test scores could not be considered because of practical difficulties involved in obtaining such scores. Moreover, achievement tests are not available in all the subjects at all levels. Besides this, facility of administering such tests is neither available, nor the students would have agreed to spare so much of their time for that purpose. Hence, it is the examination scores, which may ultimately be employed as performance criterion.

It is true that effectiveness of the school or its good performance may not be merely confined to academic results but it extends to all other activities carried out by the school. Though this viewpoint, rightly argues Veeraraghvan (1986), is highly valid yet objective measurement of all other activities carried on by a school is rather extremely difficult and impractical and so in several cases researchers have depended on examination results only for ascertaining the performance of an institution.

Before attempting to investigate in what respect the effective schools differ from those of non-effective or less effective schools, it is important to establish that some schools are more effective than other. Academic performance presently is a broad term, which includes a lot of variables of it. Otto (1958) considered the pupil personal services to society, library facilities/services, general school building and accommodation as variable for academic performance. Machiman (1962) drawn attention towards teachers and their qualities and school plant, Raymond (1974) concluded the curricula, supervision, counseling and guidance, school discipline, teacher personal, school building and commodity relations. Pole (1976) emphasized teaching personal, school plant and equipment and Burgess (1979) declared organization of the school curriculum, home department, uniform, PTA and examination system, the indicators of academic performance as studied by Manvikar (1983). There are many factors which go into the making and determining of the
school climate namely the physical facilities available, potentiality of the students, quality of teacher, etc. No two schools are comparable since the factors, which are conductive to the efficiency of a school, vary from institution to institution. Thus, the qualitative differences in the schools have a large bearing on the academic performance and personality of the products of a particular school.

It is also true that, on the home front, the factor affecting the students achievements are the socio-economic and educational status of the family, discipline, career planning, aspirations, and ambitions, the family discipline and parental control and the home environment of the student.

What ever be family background, once the child reaches the school going age, half of his working hours are spent in the school. The most vital factors for shaping the personality of the child and promoting his mental growth as also influencing his academic achievement are firstly the teacher with whom he interact and secondly, the school where he studies.

It is so, in spite of the fact that learning is very personal process. But the conditions under which this process is carried on are primarily influenced by the teacher. The learner and the teacher, though they are distinct entities are by no means independent of each other.

The role of teacher being pivotal is shaping a child, Ginnot (1955) in one of his books, quotes “responsible, sensitive and dedicated teachers feeling in the following words; I am the decisive element in the class room. It is my personal approach that creates the climate. It is my daily mood that makes the weather. As a teacher, I possess tremendous power to make a child life miserable or joyous. I can be a tool of torture or an instrument of inspiration; I can humiliate or humour, hurt or heal. In all situations, it is my response that decides whether a crisis will be escalated or de-escalated and a child humanized or de-humanized.”

Spaulding and Challahan (1972) recognized the following measures of the academic performance.

1) Percentage of children of each year of age in the school.
2) Average number of days of attendance.
3) Average length of time required for the child to compute the given task.
4) Percentage of children who are allowed to complete their schooling.
5) The quality of education that the school affords.

National Society for the Study of Education considered the following factors under teacher efficiency for the quality indication.

1) Number of pupil per teacher
2) Number of classes per teacher
3) Number of preparations per teacher
4) Total amount of time spent by a teacher
   A. During school hours
   B. Utilize school hours
5) Degree to which teachers are consulted concerning school policies.

Naik (1975) has come across of the following measures of academic performance.

1) Result of examinations.
2) Wastage
3) Stagnation
4) School facilities

Kothari Commission has suggested that, the efficiency of the school can be improved by full utilization of all existing facilities of school in terms of land, building, equipment and personnel. After going through the aforesaid discussion, the researcher developed the following indicators of Academic Performance.

a) Students Performance
b) Quality of Teachers
c) Facilities and Infrastructure
d) Students' Discipline
e) Examination and Evaluation
f) School Administration.

A detailed analysis of costs of education required computing costs of education by levels of education, by components, with reference to a specific point
of time and per unit. In other words, costs of education have to be computed by levels and by types of education such as pre-primary, primary, middle, secondary (general), school (vocational), higher (general), and higher (professional). An analysis of costs of education by levels of education depicts very clearly the balanced or even (unbalanced or uneven) nature of the investment in the educational pyramid. Cost of education by components, say by the recurring items and the non-recurring items and by further desegregated components, would help us to know the nature of production process—whether it is capital intensive or labour-intensive. They also help us better in identifying the determinants of costs of education and their quantitative influence. Cost of education can also be computed by type of instruction; formal, non-formal etc. finally, like any statistics, the statistics on costs of education should refer to a time period. While generally costs of education are calculated per year, it is not unreasonable to calculate the costs by the duration of a given level/type of education, say costs of education of primary level referring to five-year time period, costs of education of middle level referring to a 3 year time period etc. It is also not uncommon sometimes to calculate cost per teaching hour. But such costs, including annual costs, do not reveal the ‘full’ costs of education. For example, the retirement benefits, which are also a part of costs of education, can not be captured in such exercises.

1.3.10 Taxonomy of costs of school education

Two approaches may be adopted to broadly classify educational cost into different categories. First approach seeks to classify costs on the basis of dichotomy in public and private ownership of resources used-up in production, where as second approach is based on the distinction between institutional and individual source and ownership of resources used up in production. Classification of cost as social and private cost is based on the first approach, whereas second approach distinguishes between institutional and individual cost. Costs may also be distinguished on the basis of nominal and real measurement. In other words, costs of education in most economies are incurred at two domains: the private and the public domains, which may also respectively be referred to as individual and institutional domains (Majumdar, 1983). Costs of education incurred at individual domain include costs
on education incurred by the pupils and by their parents or guardians, such as on books, stationery, fees, hostel, uniforms, transport etc. The institutional costs of education, also known a cost of supply of education, mainly include the recurring costs, e.g. expenditure on teachers’ salaries, salaries of the non-teaching staff, scholarships, stipends etc., and the non-recurring costs which include expenditure on purchase of buildings, furniture, equipment, etc. The sum of the costs of education incurred at the individual and the institutional domains, net of transfers such as fees, scholarships and stipends, gives the social costs of education.

**Social (total) costs of education**

The sum of individual costs and institutional costs gives the total costs of education. While estimating the social costs of education, it is necessary to see that no double counting of any item is made. If there are transfers, e.g., in terms of fees—a transfer from student to the institution or scholarships a transfer from institution to the individual it is important that social costs of education take into account only the net of transfers. Thus,

\[
\text{Individual Cost} = \text{Household Expenditure on Education} + \text{Opportunity Costs}
\]

\[
\text{Institutional Cost} = \text{Recurring Costs} + \text{Non-Recurring Costs}
\]

\[
\text{Social Cost} = \text{Individual Costs} + \text{Institutional Costs, Net of Transfers}
\]

**1.3.11 Relationship between private/individual and social/institutional costs of education**

Both the private and institutional costs of education are of high significance not only because of their magnitudes, but also because of the nature and characteristic that are associated with those costs. While institutional investments can provide the educational facilities, only individual efforts and investment will make it possible to take advantage of them. The two are so inter-related and inter-dependent that, in the absence of either of them, there is likely to be under allocation of resources for education in these economies (Panchamukhi, 1977). "Unless the two kinds of investments match there can be only empty or over-crowed, class rooms, as Majumdar (1983) rightly argues. The time horizon aspect of the two should be taken
into consideration in understanding the relationship between the two. The decision
to incur our costs on education from the individual point of time would be based on
a relatively short-term perspective- the immediate and life-time, and very rarely an
inter-generation time period perspective. On the other hand, the decision to incur our
costs on education from the institutional point of view would be based upon such
longer time perspective. Even the simple example of costs on buildings on the one
hand, and costs on stationery on the other explains similar differences in time
dimension in investment decision-making in education.

1.3.12 Cost classification of the study

The study is confined with the institutional cost of education essentially
because of unavailability of data on individual cost of education. The institutional
costs of education can be analysed by adopting any one of the following ways of
classification:

a) variable and fixed costs of education
b) recurring and non-recurring costs of education
c) current and capital costs of education

The above three classification are just alternative ways of classification. In
other words, the fixed, the capital and the non-recurring costs mean the same, viz,
the costs incurred almost once for all (unless the scale of operation/production
changes), and the costs that do not vary along with a change in the inputs/outputs of
the educational system. On the other hand, the variable or recurring costs refer to the
costs that are incurred every year and have direct correspondence with the inputs or
outputs of the system. It may be noted that recurring costs are defined as one that are
incurred every year; and non-recurring costs are incurred, generally one for all.
Recurring and non-recurring costs are synonymous with variable and fixed costs
respectively. Fixed costs are defined as those costs that do not change with a change
in the number of pupils, e.g., costs on buildings, while variable costs vary with a
change in the number of pupils, e.g., cost on teachers' salary, laboratory materials,
costs on scholarships etc.

Further, the items of expenditure have been divided in to two categories:
recurring and non-recurring. The items of expenditure and the basis of their
classification into two broad groups of recurring and non-recurring costs is discussed below:

1. **Building**
   Investment in building is the single largest item of fixed cost, obviously expenditure on the construction of building is an item of fixed capital or non-recurring costs. But expenditure on repairs and maintenance of buildings has been classified as recurring expenditure.

2. **Library**
   Every year each institution incurs substantial expenditure on books, journals, newspapers and periodicals. Once a book/journal has been purchased, it becomes a part of the stock of books/journals in the library, which may be used repeatedly by several generations of teachers and students. From this point of view, expenditure on these items at the beginning of the opening of an institution is treated as investment in fixed capital or recurring expenditures. Besides this, recurring expenditure on i) binding of books and journals, ii) use of insecticides to protect these books and journals from white ants, iii) racks, almirahs, tables etc. for the arranging of books and journals for display and consultation iv) newspapers, magazines of general interest, and v) stationery and such other sundry expenses is incurred each year.

3. **Furniture**
   Furniture has a specified life span, and hence, its services could be utilized only over its lifetime. It can, therefore, be classified under non-recurring expenditure. Certain amount of expenditure is, however, incurred on repairs and maintenance of furniture every year. Expenses on polishing, replacement of cane and other repairs fall under this category. Expenditure of this nature has been treated as recurring expenditure.

4. **Equipment**
   The equipment such as: typewriters, duplicating machines, photocopiers, computers, tools, instruments and other equipment for laboratories of science departments, electric fans, bulbs, tubes, coolers, heaters, air-conditioners have their own life span and also the number of each equipment is not required to increase
whenever there is increase in enrolment. So expenditure on these equipment may be treated as non-recurring expenditure. But expenditure on routine maintenance and repairs of equipment is needed periodically, and hence, these components of expenditure may be treated as part of recurring expenditure.

5. **Salary and Other Allowances**

The number of teachers employed in an institution is the function of enrolments though the number of teachers may also be affected by such factors as enrolled per class, number of sections of a class, number of subjects taught, optional papers allowed to be offered by students and teacher-student ratio prescribed by educational authority as the norm to be adhered. As salaries and wage of both teaching and non-teaching staffs have to be paid every month, this constitutes an item recurring expenditure.

6. **Scholarships and Stipends**

Educational authorities have been striving hard to enable the meritorious but poor students to have an access to school, higher, professional and technical education that opens up new vistas for entry into high income and prestigious occupations. For the purpose, a number of scholarships, stipends and other concessions are offered. Therefore, most educational institutions incur such expenditure, which is of recurring in nature.

7. **Hostel**

Some institutions are required to maintain hostels for the benefit of non-resident students. Although a major part of the recurring expenditure on hostel is recovered from the students in the form of room rents, water and electricity charges, messing charges etc., but there are certain expenditures like expenditure on the upkeep and maintenance, including wages and salaries of hostel staff, furniture, electrical fittings, repairs of buildings, recreational facilities incurred by the institution which are recurring in nature.

8. **Applied Chemical and Consumable Store**

Expenditures on items used for conducting scientific experiments has been treated as recurring expenditure. Similarly, expenditures on consumable stores like
chalk-sticks, stationery, ink, pencils have also been considered as recurring expenditure.

9. **Miscellaneous (Non-recurring)**

Expenditure on such items as bells, wall clocks, carpets, matting etc. have been considered as non-recurring expenditure.

10. **Miscellaneous (Recurring)**

Such sundry items as postal charges, provision of dresses to fourth class employees, fares and freights, entertainment etc. have been included in miscellaneous recurring group (Figure on Classification of Education Costs).

**Figure 1.2**

**Classifications of Educational Costs**

```
Cost of Education

Institutional Cost
  Recurring Costs
  1. Teachers' salaries
  2. Salaries of other staff
  3. Scholarships, Stipends, etc.
  4. Teaching and Learning Material
  5. Hostel
  6. Maintenance of Building
  7. Maintenance of Equipments
  8. Library
  9. Chemicals and other consumables
  10. Depreciation
  11. Other Expenditure

Individual Cost
  Non-recurring Costs
  1. Building
  2. Furniture
  3. Equipments
  4. Library
  5. Teaching and Learning Material
  6. Others

Visible Costs
  Tuition Costs
  1. Tuition Fees
  2. Other Fees

Opportunity Cost (Foregone Earnings)
  Non-tuition Cost (Maintenance Cost)
  1. Books and Stationery
  2. Hostel
  3. Transport
  4. Uniforms
  5. Others

Note: Constructed by the Investigator
```
The individual, institutional and the social costs of education thus calculated is nothing but the money costs of education, which can be termed as visible costs of education. The total costs of education not only include the money cost of education, but also the invisible opportunity cost of education. The earnings which would have been earned by the amount of investment made in education had it been invested otherwise (in the best or the average sector) in the economy other than education is known as the opportunity costs of education. The concept of opportunity cost is relevant in calculating private, institutional, as well as social costs of education. The earnings, which would have been earned, had the pupil opted not to go for a given level of education are known as the private foregone earnings of the given level of education or the private opportunity costs of education. For example, the earnings of an individual with say i-th level of education will be the opportunity costs of (i+1) the level of education. The sum of private monetary costs and the private opportunity costs give us the total private cost of education. The society’s opportunity cost of education may differ from the private opportunity cost of education. The benefits foregone which would have been available to the society in the absence of educational programmes would be the social opportunity cost of education (Mishra, 1972). The sum of private costs of education and institutional costs of education, including the society’s opportunity costs of education, net of transfers such as scholarships and fees gives us the total social cost of education. Figure above gives details on the taxonomy of costs of education.

Now the study shall take up the concept of the ‘unit’ costs in education. However, the details on institutional and private costs of education will be discussed later.

1.3.13 Unit cost of education

Cost of education have no meaning if they do not refer to a unit, in which case the same statistics can be called the unit costs of education. Unit costs should be defined as the cost of an educational unit. Then the question that arises is: what is an educational unit? Ideally, educational unit can be defined as “the ability acquired by the educated to participate in the development of the economy and of civilization”. (Gern, 1967). But as such ‘ability’ cannot be measured in any meaningful way. Hence, in practice, the units in the unit costs of education refer to
the number of pupils enrolled or on rolls. Sometimes, it is also argued that the number of pupils actually attending the schools/colleges should be taken as the units, and not the total number of students on roll. The great divergence between enrolment and attendance, particularly at lower levels of education, lends support to this argument. It is interesting to note that while in general economic theory the unit costs refer to units of output, in either case described above we consider the inputs, viz., the pupils as the units. So, in terms of standard economic theory, and more importantly for effective manpower planning, it would be better if costs of education are calculated on per unit of output, i.e., per successful student. Sometimes, this is known as the ‘effective’ cost of education (Nair, 1981). The effective cost of education takes care of wastage in education. The difference between the effective costs and what can be called ‘normal’ costs of education reveals the efficiency of the given level of educational system.

Sometimes, it is also being suggested that unit costs of education should be calculated per child of the relevant age-group population. This may indicate to some extent the efficiency of the educational system, efficiency being measured in terms of the coverage of the relevant age-group population by the educational system. For certain purposes of comparison, costs of education per capita, taking the whole population of the concerned region into account, are also computed. Sometimes such a ratio is computed taking the population of the school/college going age-group (6-23) as the denominator. Thus, we have six alternative terms of unit costs of education:

(a) Cost per pupil enrolled (which can be called ‘normal’ cost of education);
(b) Cost per pupil actually attending the school/college;
(c) Cost per successful pupil (which can be called effective cost of education);
(d) Cost per pupil of the relevant age group;
(e) Cost of education per capita; and
(f) Cost of education per head of the School/College going age group.
However, it is necessary to note that all these concepts of unit costs are nothing but average costs of education. The selection of the unit should obviously be influenced by the purpose of analysis. It is not difficult to explain that each of the above concepts serves a specific purpose. Concept (a) is the most generally used concept in planning at every level of education. But when there arises large difference between ‘reported’ enrolment and the actual attendance, (a) does not serve the purpose adequately, in such contexts (b) is the better one, particularly at lower levels of education where mere attendance is considered as an enough indicator of education (or educational performance). But for manpower planning purpose (c), i.e., the effective unit cost is basically essential. To relate costs of education with the performance of the system, the latter being defined as coverage (for example, at elementary level), (d) would be a better tool. In the absence of detailed data, and essentially for crude comparisons, very often (c) and (f) are also adopted.

In all these cases, it may be noted, ‘unit’ in unit costs refers to students in different forms-as an input, or as an output, or the wider base (viz., population or population of the relevant age-group) from which the inputs are drawn. But sometimes, unit costs are also calculated with reference to other ‘unit’ such as cost per school, cost per classroom, cost per teacher etc. The selection of the unit however depends upon the purpose on hand. As the costs are generally found to be highly sensitive to the number of students, the student is most often considered as the unit. But suppose, we are calculating costs of classroom equipment such as tables, black boards, globes, maps, charts, chalks and dusters etc., the class forms the right unit. Similarly while unit costs are calculated per year or so in general, sometimes they are calculated per teaching hour, or per the whole duration of course, or costs per working day, etc. While the literature is abundant with estimates of such costs, rarely attempts are made to cover costs in a wider perspective. In fact based upon the above mentioned different concepts of unit cost, costs of wastage in education, costs of stagnation etc., can also be calculated. Conceptually it may also be possible, and will be highly useful for planning to estimate costs of under optimum utilization of resources in education, cost of misallocation of resources in
education (Dougherty & Psacharopoulos, 1977), costs of irrelevance of education, costs of mismanagement of resources in education, costs of under optimum coverage of pupils in education, costs of introduction of new curriculum in education and so on.

Unit costs of education are particularly important in educational planning. They are most essential for educational planning in general and the planning of resources in particular. Unit costs are also efficiency indicators. The inverse of unit costs is after all, an index of total factor productivity in the production process.

1.3.14 **More on taxonomy of costs of education**

Now let us discuss on some details of institutional and private costs of education.

1.3.14.1 **Direct and indirect costs**

Sometimes costs are also classified as direct and indirect costs. Direct costs are referred to as those in which money figures, while indirect costs are those that are imputed and monetary transactions do not figure in. Often opportunity costs are known as indirect costs, while all the others are known as direct costs. They are also sometimes referred to as invisible and visible costs of education respectively.

1.3.14.2 **Costs of education at current and constant prices**

It may be necessary to note here that the costs of education, like any money-based statistic, can be expressed either at current (market) prices or at constant prices. When the costs of education are expressed at constant prices, they take care of price-inflation and thus represent the 'real' costs of education. Particularly, when we are computing costs of education for over a time period, it is necessary to compute the costs of education at constant prices. Cost of education expressed in current prices, when compared overtime gives a false picture, because during the same period the prices of goods and services might have increased, resulting in non increase in real costs of education. Or in other words, the resource- cost in constant prices might remain the same or might be less than what the costs at current prices indicate. There are two solutions to the problem. A critical solution can be to recalculate the costs for a given year applying to each item or goods or services its corresponding price during the base year. Another solution is construction of an
educational price index, based on the prices of goods and services used in the educational process. Neither or the two, is however, an easy task, as they require huge information. But it is widely felt that there is no appropriate method of expressing the costs of education in constant prices because of obvious problems. The commodities that enter the educational activity constitute a minor component of a basket of commodities that is used to construct the wholesale price index. More importantly the relative weight age of the commodities would differ quite significantly. Hence, any general price index cannot serve the purpose adequately. The need for an appropriate price index is widely felt. The use of national/state income deflators generally adopted is only second best alternatives.

1.3.14.3 Total, average and marginal costs

In economic theory, the other important concept relating to costs, which is rarely used in the educational sector is "marginal cost". The concept of marginal cost of education refers to the cost incurred on an additional pupil to get him enrolled in/attended/completed a given level of education. The total cost of education for given level in a given year and a region, corresponds to all costs. While the average cost is same as the unit costs, the marginal cost is that which would have to be borne in order to enroll one more unit into the educational process. While the concepts of total and average costs are clear and are extensively used, the use of marginal cost in education is relatively restricted. The costs of enrolling one additional pupil in a school may sometimes be virtually nil, as teacher's costs or costs on non-teaching staff may not necessarily change with every marginal change in the number of pupils. But the costs on incentive etc., may proportionately increase. Similarly if we are concerned with additional groups of pupils the marginal cost concept may be more relevant. Both the marginal and average costs of education can also be computed with reference to various other units. More importantly for the purpose of planning, statistics on average/marginal cost per school is also very useful. Sometimes, it is also attempted to compute costs, average and marginal, of education per class/or grade, per class- room, per section (when a whole class/grade is divided into several operationally manageable sections), per teacher, etc.
1.3.15 Determinants of unit costs

With a view to influence (often to reduce) unit costs of education, one is generally interested in finding out the determinants of unit costs. In a traditional educational system, one can visualize strong relationship between enrolments and unit costs. The other likely determinants are teacher-pupil ratio, average salary of teacher, ratio of non-teaching staff to teaching staff, cost per pupil, etc. It is generally tested, sometimes confirmed or sometimes rejected that unit costs of education are significantly influenced by the size of the enrolments, by the size of the teacher–pupil ratio, by the average salary of the teacher or by the ratio of non-teaching cost to teaching cost. Many a time regression equations (simple and multiple) are used for this purpose.

1.4 Need of the Present Study

Though India had started funding the education system progressively in the initial decades of planning, the same momentum could not be maintained and this sector gradually got less and less priority in allocation of resources. The increase in the proportion of total educational expenditure from 9 percent to 25 percent between the first and the fourth five year plans and coming down steadily afterwards to reach the level of 7 percent during the eighth five year plan explains the story that how the education system in India has been experiencing the trials and tribulations. Towards the end of the eight five year plan, India had been in to a major economic crisis which further heightened the pressures on mainly education system except the elementary education, which received huge international funding. And then, with the beginning of an era of austerity this sector began suffering the most.

Around the same time, when the recent economic reform programmes were going on in the country, the growing strength of another kind of pressure also weakened the efforts to save higher secondary and higher educations from suffering severe financial inadequacies. Increasing political voice mobilization in favour of primary education and literacy drives to make the country fully literate with in a definite time frame generated a kind of argument that higher education is a hindrance for primary education and funds should be diverted to give the latter the much needed boost. However, this argument does not seem logical and justifiable to
a section of educationists. Higher education, as they say, has got important ‘backward linkages’ with primary education. Primary education can’t grow qualitatively unless we have a good higher education system to produce qualified teachers. Universal Elementary Education is a worthy goal in itself, but it does not provide on its own the required strength to compete in the international market. Therefore, school education being the base and foundation stage for higher education and finally the higher education have a crucial role to play in the coming days as we find a renewed emphasis on a market friendly economy, rather than on stringent planning.

As economies of both developed and developing countries become more knowledge and technology intensive, the system of education would continue to become more central to economic progress. Almost in every country, though in varying degrees, the search for knowledge and new technology has become the major concern of national economies, since productivity is increasingly determined by the knowledge and skill of workers put to their tasks. It is this search which makes the task of school education more complicated as it is the road to higher education and the pressure to perform viably and sustainable, is ever greater than before. Therefore, the high school and higher education have to stay as a key sector of the national economy and attaching higher priority to basic education does not need any re-appropriation of funds from higher secondary or higher education to the former. Rather, the need of the hour is to view the entire system of education as one whole (Khadria, 1998). Any distorted approach in this regard and setting one sector against another would be detrimental to the whole system.

The other challenge to education system came from the introduction of economic reforms in the country during the early years of 1990s. The Gulf crisis of 1990-91 and its resultant effect on the Indian economy necessitated some sweeping changes in various sectors of the economy and the institutions of higher education were very badly affected due to drastic cuts in their required financial demands. Presently, the problem is related to the inability to meet the basic needs of the educational institutions, which are recurring in nature.
After the introduction of market oriented culture in the Indian economy through the economic reform programmes, these institutions are being asked to be more business like and to be more cost-effective. The institutions of higher learning are now asked to raise their own resources to the maximum extent possible, in order to make them more cost-efficient and less dependent on the governmental sources of finance.

To sum up, the preceding analysis has brought to focus the following points:

a) There has been sizable increase in the expenditure on education during the post-independence period. In terms of the proportion of the GNP, however, it is still far short of the target of 6 percent accepted by the Government of India.

b) Considered sector-wise, there has been marked increase in the expenditure on elementary education as percentage of GNP. All other sectors have declined.

c) The bulk of expenditure under the central and state governments is on revenue account. The share capital expenditure, which is equally essential for the balanced development of education, is only marginal.

d) The outlays/expenditure for education under the five-year plans have declined considerably as proportion of the total plan outlays.

e) There have been wide fluctuations in the intra-sectoral priorities as observed from the percentage of outlays/expenditure allotted to various sectors in the plans. After continuous down slide up to the seventh plan, the emphasis has shifted to elementary education. This has resulted in virtual de-emphasizing of secondary/university and technical education, at least in terms of allotment of plan resources. A similar position emerges, when considered in terms of plan and non-plan expenditure for selected years.

f) The state governments are also spending about 90 percent of their budgets on recurring expenditure of schools. Other schemes like scholarships, teacher education, textbooks do not seem to constitute priority areas.

g) Inflationary pressures have brought about considerable erosion in the real investment in education. What meets the eye is not the real investment in education.
h) There has been considerable reduction in the budgetary allotment for education particularly under the state governments.

i) There has been marked reduction in the proportionate contribution from private sources including students fees.

j) Over the years, the rising expenditure on staff salaries has caused considerable reduction in the expenditure on other items which are crucial for the balanced development of secondary education as also are vital inputs to its qualitative improvement.

k) The NPE 1986 has also drawn the attention towards the fact that in order to decide future course of funding school level institutions a system of ascertainment of total cost of these institutions shall be devised.

All the changes in educational economic situations demand that the issue of total cost be studied more minutely at the micro level. However, the survey of available studies suggest that very few studies at micro level have been conducted so far. A few studies on financial and cost aspects were carried out at the university level (Nanjudnappa, 1987; Jha, 1990; Panchamukhi. 1995) and at school level (Pandit, 1969). Hence the need for the present study. This study is inevitable for the educational policy makers, planners, administrators and implementers at national, regional, state and grassroots level.

1.5 Statement of the Problem

The present problem has been spelt out as under:

"COST OF SCHOOL EDUCATION AT INSTITUTIONAL LEVEL: A CASE STUDY OF TWO BLOCKS IN THE DISTRICT GURGAON, HARYANA."

Operational definition of key terms used

1. While measuring costs, the present work shall follow the accountant's procedure rather than the economist's because it uses data from Annual Accounts of the schools of two blocks of Gurgaon district, which show the actual expenditures that have already been incurred. As a result of difficulty in measuring opportunity cost, particularly because of the difficulty in measuring
the earnings forgone, or the value of land or materials that are donated rather than purchased etc. Educational cost analysis mostly concentrates on money expenditure rather than on opportunity costs.

2. The present study does not include the individual costs. As most of the financial requirements of the school education is undertaken by the state governments, Government of India and through grants-in-aid, the scope of study is only limited to the institutional costs of the sampled schools of two blocks; i.e. SOHNA and NUH of Gurgaon district. As has already been said, only the relevant parts of institutional costs, i.e. recurrent costs will be taken into account for analysis. It would be worthwhile to elucidate various items covered under these two broad categories.

Figure 1.3
Taxonomy of Costs of Education

<table>
<thead>
<tr>
<th>Cost of Education</th>
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<tr>
<td></td>
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<tr>
<td>Institutional Cost</td>
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<tr>
<td>Money Cost</td>
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<tr>
<td>Opportunity Cost</td>
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<tr>
<td></td>
</tr>
<tr>
<td>Non-Recurring Cost</td>
</tr>
<tr>
<td>Salaries of Teaching, Non-teaching, Research &amp; Technical Staff</td>
</tr>
<tr>
<td>Scholarships, Stipends, etc.</td>
</tr>
<tr>
<td>Books, Journals, Laboratory Equipment</td>
</tr>
<tr>
<td>Depreciation</td>
</tr>
<tr>
<td>Others Expenses</td>
</tr>
</tbody>
</table>

|                |
|                |
| Individual Cost|
| Money Cost     |
| Opportunity Cost|
|                |
| Teaching Cost  |
| Tuition fees   |
| Other fees     |
|                |
| Non-Teaching Cost|
| Accommodation |
| Books & Stationery |
| Transport |
| Others |

Note: Constructed by the Investigator
3. But in the present study, the expenditure figures are used for cost calculations because whatever data are available are only in the form of expenditures on various activities of the sampled schools of both the blocks.

1.6 Objectives

After developing the research tools such as: School Schedule, Village Schedule and District/Block Schedule, the main objectives of the present study are as follows:

i. To calculate the Institutional Costs (Total and Unit Costs) for education in the selected schools of Sohna and Nuh blocks of Gurgaon district in Haryana and compare the institutions costs calculated for the sample schools between both the blocks of Gurgaon district of Haryana.

ii. To examine the academic performance of the students of the sample schools taken up for study in both Sohna and Nuh blocks and compare the academic achievement amongst the sample schools between selected blocks.

iii. To assess and compare the impact of institutional costs on academic performance in the selected schools in both the selected blocks of Gurgaon district.

iv. To identify the available resources in the location of schools, both physical and human within the educational sectors and exploring the score for their optimal utilization for educational purposes within that particular locality.

The main questions that the present study would strive to answer are:

1. What is current approach towards state financing of education and what is the present state of financing of school education in the country?

2. What are the basic features of the present pattern of funding of secondary and higher secondary schools and how efficient are they?

3. Is there a financing problem? If so, what is its nature?

4. Why do we need a restructuring of the present pattern of institutional financing at school level?
5. In what way will such restructuring benefit the system and uphold the standards of cost-effectiveness as well as efficient resource mobilization and utilization?

6. How should the institutional cost-calculation be undertaken to measure its relationship with achievement or the students' performance?

7. How should the unit cost calculation be undertaken so as to decide who should bear it and to what extent?

8. What kind of policy implications will it have for the future of school educational finance in India?

Responses to all the above questions will be found through the entire body of the thesis in a scattered manner because all these issues are strongly intertwined and a strait jacket way of answering them in exact succession may not promote a reasoned discussion. But generally, the discussions made in the following pages broadly reflect arguments regarding all these questions. For the purpose of examining these issues, a comparative study of schools of two educational blocks of Gurgaon district of Haryana is taken up. In accordance with the two-fold classification of all the functioning schools in the states, educationally and economically 'developed' and 'less developed', the block of SOHNA is a developed while the block NUH is a less developed one. Thus, the two blocks studied here represent each of the two major categories. The two blocks have many similarities and dissimilarities, which are described in detail in later chapters.

1.7 Hypotheses

Though the study looks into all the issues that have been raised above by a number of questions, it specifically concentrates on examining some core issues which is done by framing certain null hypotheses and one research hypothesis (last one). The study shall test the following null hypotheses:

1. There is no significant difference between unit and institutional cost of education at all levels of schools in both Sohna and Nuh blocks.
2. There is no significant difference in academic performance at all levels of schools in both Sohna and Nuh blocks.

3. There is no significant relationship between the unit cost and academic performance of all levels of schools in both Sohna and Nuh blocks.

4. The present system of financing school education is not cost effective. In other words, the cost oriented approach of financing of school education system would not be helpful in identifying and plugging the wastage and inefficiency.

1.8 Delimitation

Any study on cost of education suffers from certain limitations. The present study is no exception to this. It carries certain additional limitations as well. Precisely, the delimitations of the study are as follows:

1. The present study would find out the costs of education at institutional level only.

2. The present study on costs of education is somewhat incomplete because private costs of education are outside the framework of this study.

3. The term 'education' used here is limited in its scope. The present study is largely confined to formal education system only.

4. As regards to education, the present study is limited to school level education only, thereby not considering the higher education in this study.

5. An unsound database generally poses constraints for any study in the field of economics of education. The present study could also experience certain constraint. Over-reporting of enrolment could be just one of the problems and estimation of annual value of fixed assets may be yet another problem.